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## ZOOLOGY

**Oogenesis in Insects.**—It is a much debated question whether the sex or germ cells are set apart at the outset of embryonic development or arise later by modification of certain of the somatic or body cells. The continuation of Marshall's studies on the anatomy and embryology of the wasp *Polistes pallipes*<sup>1</sup> treats of the early history of the cellular elements of the ovary. The author finds that in the embryos and very early larvæ, each undifferentiated ovary is a syncytium with a number of nuclei similar in structure. In the course of development oocytes, primitive nurse-cells, and follicular epithelial cells are developed from the undifferentiated cells of the distal end of the egg tube. In a similar study of a Phryganid<sup>2</sup> he found that the first differentiation had taken place in a fairly old larva. At this stage the cells may be either "1st, undifferentiated or, 2d, passing through the first stages in the development which is to result in the further differentiation of oocytes or nurse-cells. Cells of the first group may either remain unchanged and become the epithelial cells or they may pass through the same stages as those of group two." Thus Marshall believes that the sex cells arise late and have a common origin with certain other cells in the ovary.

These results agree essentially with those of the earlier workers, notably Korschelt, '86, on the history of the germ cells of insects, but are in sharp contrast to the results of Heymons '95, Lecaillon '00-01, and many other recent workers who contend that the germ cells are in origin perfectly distinct from the follicular epithelium.

W. A. RILEY.

**Parthenogenesis of *Bacillus rossii*.**—The theory that each body cell contained both male and female constituents, and that the egg cell in becoming mature gave off its male elements in the second polar body has also been much discussed. This idea was supported by finding that the second polar body was not given off from certain eggs which

<sup>1</sup> Marshall, Wm. S. '07. Contributions towards the embryology and anatomy of *Polistes pallipes*. II. The early history of the cellular elements of the ovary. Zeitschr. wiss. Zool. lxxxv; pp. 173-213, pls. 12-14.

<sup>2</sup> The early history of the cellular elements of the ovary of a Phryganid, *Platyphylax designatus* Walk. l. c. pp. 214-237, pls. 15-16.